

## HEALTH AND SAFETY PLAN FORM

CDM FEDERAL PROGRAMS CORPORATION

CDM FPC Health and Safety Program

PROJECT NAME: Libby Asbestos Project - Emergency ResponseWORK ASSIGNMENT #: Task Order No. C0002REGION: VIIIJOBSITE ADDRESS: 501 Mineral AvenueCLIENT: USDOT Volpe National Transportation Systems CenterLibby, Montana 59923PROJECT: Residential and Source SamplingDOT CONTACT: John McGuiggin, TOCOTREPA CONTACT: Paul Peronard, EPA OSCPHONE #: (617)494-2574PHONE #: (303)312-6808

## OBJECTIVES OF FIELD WORK:

TYPE: Check as many as applicable

The purpose of this sampling effort is to acquire information useful for the design of more comprehensive environmental exposure investigations to assess the magnitude and extent of residential exposure to toxicologically relevant asbestos fibers.

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Active               | <input type="checkbox"/> Landfill                | <input type="checkbox"/> Unknown                       |
| <input checked="" type="checkbox"/> Inactive  | <input checked="" type="checkbox"/> Uncontrolled | <input type="checkbox"/> Military                      |
| <input type="checkbox"/> Secure               | <input checked="" type="checkbox"/> Industrial   | <input checked="" type="checkbox"/> Other: Residential |
| <input checked="" type="checkbox"/> Unsecured | <input type="checkbox"/> Recovery                |  |
| <input type="checkbox"/> Enclosed Space       | <input type="checkbox"/> Well Field              |  |

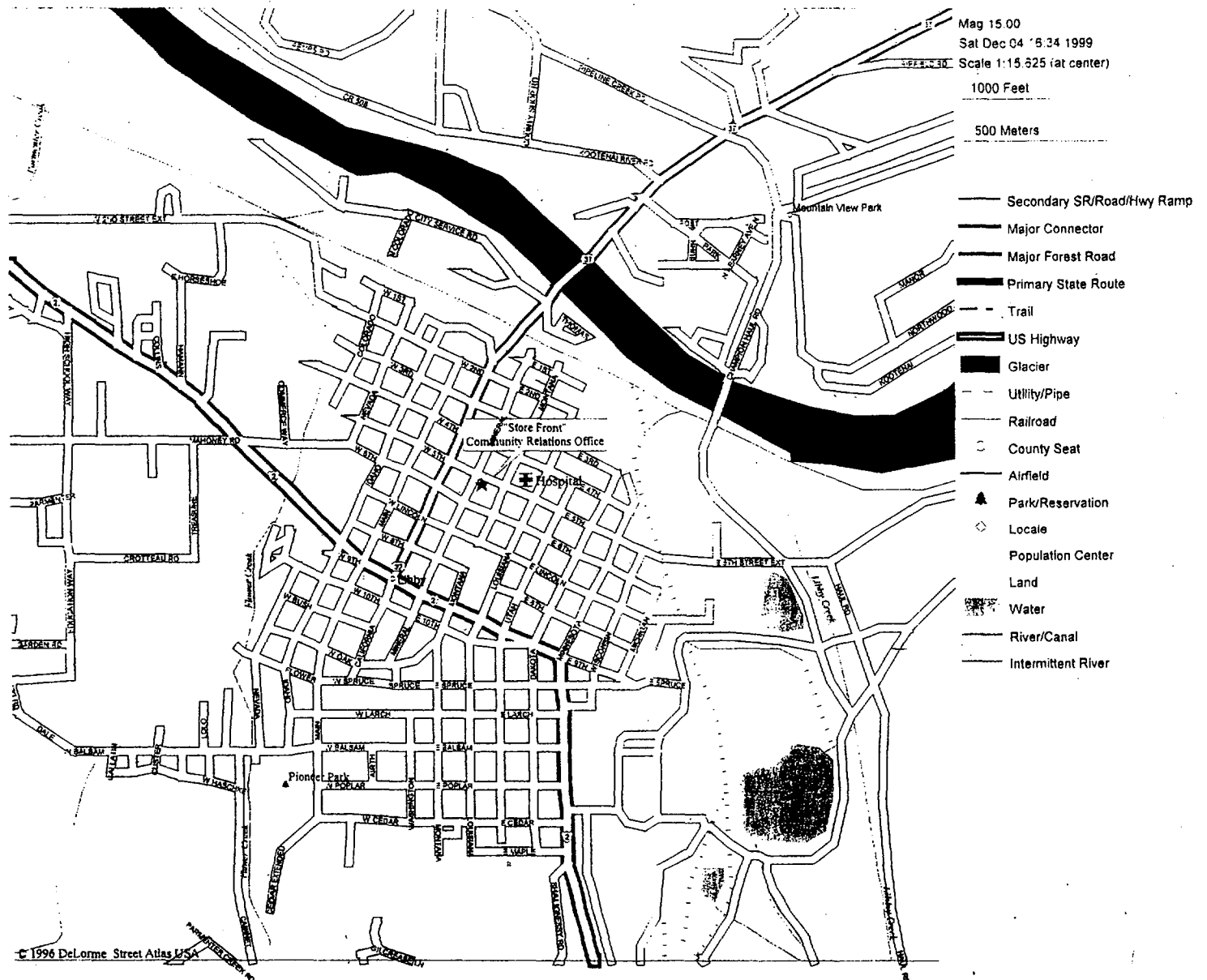
## DESCRIPTION AND FEATURES:

The town of Libby is located in the extreme northwest corner of Montana. According to historical mining records, 80 percent of the world's vermiculite came from the Zonolite Mountains in Libby, Montana. Vermiculite is used in various building materials and textiles. Along with the enormous deposits of vermiculite mined in the Zonolite Mountains, millions of tons of tremolite, a rare and exceedingly toxic form of asbestos, was unearthed and released into the environment as a by-product of this mining and processing activity. This toxic asbestos is suspected to be affecting the health of the residents of Libby. Due to this imminent threat to human health, the USEPA has requested emergency environmental response support from the Volpe Center.

FOUNDING POPULATION: ☒ Residential ☒ Industrial ☒ Rural ☐ Urban ☐ Other:

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Site Location Map



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**HISTORY:**

It is estimated that tons of asbestos were released into the air during more than six decades of vermiculite mining at Zonolite Mountain, three miles east of Libby. The Zonolite Mine began operation in 1924 by owner Edward Alley. In 1925, Great Northern Railroad shipped the first boxcar of "Zonolite" from Libby to an Ohio company that used it to insulate bank vaults, office safes, and filing cabinets. Other firms used the material to make building boards and roofing materials. Processing the material was a straightforward process. The vermiculite ore was stripped from the mine and hauled in trucks to a mill, where it was separated into various commercial sizes through a screening system. Some of the ore was shipped untouched. Other material was sent to an expansion plant where it was run through ovens at about 2,000 degrees, causing it to expand to 15 times its original size. In 1939, Zonolite merged with another company mining at the bottom of the hill that eventually became known as the Zonolite Co. In 1963, the company was sold to W.R. Grace and Co. who expanded the operation and increased production. Through the '60s, '70s, and '80s, millions of tons of vermiculite ore was hauled by rail to Grace plants and other companies in 30 states and six foreign countries. At one time, 80 percent of the world's vermiculite came from Libby. The W.R. Grace Company, which owned the mine for 30 years, closed it in 1990 and sold the property four years later.

**WASTE TYPES:** ☐ Liquid ☒ Solid ☐ Sludge ☐ Gas ☐ Unknown ☐ Other (Specify):**WASTE CHARACTERISTICS:** Check as many applicable.

- ☐ Corrosive ☐ Flammable ☐ Radioactive  
☒ Toxic ☐ Volatile ☐ Reactive  
☐ Inert Gas ☐ Unknown ☒ Other: Carcinogenic

**WORK ZONES:**

Work zones will be used during soil sampling and during residential dust/air sampling. The exclusion zone will be soil sampling areas and the interior of residences. The contamination reduction zone will be demarcated by the decontamination station set up at each sampling site. The support zone will be considered the 10-foot perimeter around support vehicles.

**HAZARDS OF CONCERN:**

- ☐ Heat Stress attach guidelines ☐ Noise  
☒ Cold Stress attach guidelines ☐ Inorganic Chemicals  
☐ Explosive/Flammable ☐ Organic Chemicals  
☐ Oxygen Deficient ☐ Motorized traffic  
☐ Radiological ☐ Heavy Machinery  
☐ Biological: ☒ Slips, Trips, & Falls  
☒ Other: Inhalation of particulate matter

**PRINCIPLE DISPOSAL METHODS AND PRACTICES:**

The mine on Zonolite Mountain is now dormant and its buildings dismantled. When in operation, company records indicate that nearly 300,000 pounds of asbestos a day went through the companies "dry mill", the primary ore processing facility and dustiest building on the property. Tests in 1969 showed that 24,000 pounds of dust a day were expelled from the large stack on the dry mill. The dust was about 20 percent asbestos. Several other stacks were in operations as well. Piles of waste material remain at the site. The material was also used by citizens as fill, covers on ball parks, gardens, and home insulation.

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HAZARDOUS MATERIAL SUMMARY: *Circle waste type*

CHEMICALS: Amount/Units:	SOLIDS: Amounts/Units:	SLUDGES: Amounts/Units:	SOLVENTS: Amounts/Units:	OILS: Amounts/Units:	OTHER: Amounts/Units:
Acids	Flyash	Paint	Halogenated (chloro, bromo)	Oily Wastes	Laboratory
Pickling Liquors	✓ Asbestos	Pigments	Solvents	Gasoline	Pharmaceutical
Caustics	✓ Milling/Mine Tailings	Metal Sludges	Hydrocarbons	Diesel Oil	Hospital
Pesticides	Ferrous Smelter	POTW Sludge	Alcohols	Lubricants	Radiological
Dyes/Inks	Non-ferrous Smelter	Aluminum	Ketones	PCBs	Municipal
Cyanides	<u>Metals</u>	Distillation Bottoms	Esters	Polynuclear Aromatics	Construction
Phenols	Other: <u>Fe, Mn, Ni, Cd, Zn, Pb, Cu, Ag, Cr</u>	Other:	Esters	Other:	Munitions
Halogens			Other:		Other:
Dioxins					
Other:					

OVERALL HAZARD EVALUATION: ( ) High ( ) Medium (X) Low ( ) Unknown (Where tasks have different hazards, evaluate each. Attach additional sheets if necessary.)

JUSTIFICATION: CDM Federal personnel will avoid unnecessarily agitating suspect materials and visibly dusty conditions.

FIRE/EXPLOSION POTENTIAL: ( ) High ( ) Medium (X) Low ( ) Unknown

BACKGROUND REVIEW: (X) Complete ( ) Incomplete Additional information to be collected in future investigations.

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KNOWN CONTAMINANTS	HIGHEST OBSERVED CONCENTRATION (specify units and media)	IDLH PEL/TLV ppm or mg/m <sup>3</sup> (aerosol)	IDLH ppm or mg/m <sup>3</sup> (aerosol)	WARNING CONCENTRATION ppm	SYMPTOMS/EFFECTS OF ACUTE EXPOSURE	PHOTOIONIZATION POTENTIAL
Asbestos	2% (S)	0.1 f/cc	N/A	N/A	Assumed to be similar to overexposure of nuisance dust.	

NA = Not Available

S = Soil

A = Air

NE = None Established

SW = Surface Water

GW = Groundwater

U = Unknown

T = Tailings

SL = Sludge

OFF = Off-site

W = Waste

D = Drums

TK = Tanks

L = Lagoon

SD = Sediment

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## FIELD ACTIVITIES COVERED UNDER THIS PLAN:

Task Description/Specific Technique-Standard Operating Procedures/Site Location (attach additional sheets as necessary)	TYPE	PRIMARY	CONTINGENCY	HAZARD
				SCHEDULE
1 Soil sampling.	<u>Intrusive</u>	<u>D</u> <u>Modified</u>	<u>C</u> <u>Exit Area</u>	<u>Low</u>
2 Residential dust/air sampling.	<u>Agitation</u>	<u>C</u> <u>Modified</u>	<u>Exit Area</u>	<u>Low</u>
3				
4				

## \*PERSONNEL AND RESPONSIBILITIES (Include subcontractors)

NAME	FIRM/REGION	CDM FPC HEALTH CLEARANCE	RESPONSIBILITIES	ON SITE?
Bob Rennick	CDM Federal Helena	Yes	Project Manager	<u>1 - 2</u>
Clint Werden	CDM Federal Helena	Yes	Field Team Leader/Site Health and Safety Coordinator	<u>1 - 2</u>
Brian Stewart	Pacific Env. Services	Yes	Field Team Leader	<u>1 - 2</u>
Curt Coover, Gunnar Emilsson	CDM Federal Helena	Yes	Field Scientists	<u>1 - 2</u>
John Kotson, Jeff Jones	CDM Inc. Helena	Yes	Field Scientists	<u>1 - 2</u>
				<u>1 - 2</u>

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Protective Equipment: *Specify by task. Indicate type and/or materials, as necessary. Use copies of this sheet if necessary.*BLOCK A: TASK: 1  
LEVEL: D - MODIFIED(X) PRIMARY  
( ) CONTINGENCYRespiratory: (X) Not Needed  
( ) SCBA, Airline: \_\_\_\_\_  
( ) APR: \_\_\_\_\_  
( ) Cartridge: \_\_\_\_\_  
( ) Escape Mask: \_\_\_\_\_  
( ) Other: \_\_\_\_\_Protective Clothing: ( ) Not Needed  
( ) Encapsulated Suit: \_\_\_\_\_  
( ) Splash Suit: \_\_\_\_\_  
( ) Apron: \_\_\_\_\_  
( ) Tyvek: \_\_\_\_\_  
( ) Saranex: \_\_\_\_\_  
(X) Coverall: Cloth  
( ) Other: \_\_\_\_\_Head and Eye: ( ) Not Needed  
(X) Safety Glasses: \_\_\_\_\_  
( ) Face Shield: \_\_\_\_\_  
( ) Goggles: \_\_\_\_\_  
( ) Hard Hat: \_\_\_\_\_  
( ) Other: \_\_\_\_\_Gloves: ( ) Not Needed  
( ) Undergloves: \_\_\_\_\_  
(X) Gloves: Nitrile or Latex  
( ) Overgloves: \_\_\_\_\_  
( ) Other: Specify BelowBoots: ( ) Not Needed  
(X) Boots: Leather steel-toed work boots  
(X) Overboots: RubberBLOCK B: TASK: 1  
LEVEL: C - MODIFIED( ) PRIMARY  
(X) CONTINGENCYRespiratory: ( ) Not Needed  
( ) SCBA, Airline: \_\_\_\_\_  
(X) APR: Full or Half Face  
(X) Cartridge: P100  
( ) Escape Mask: \_\_\_\_\_  
( ) Other: \_\_\_\_\_Protective Clothing: ( ) Not Needed  
( ) Encapsulated Suit: \_\_\_\_\_  
( ) Splash Suit: \_\_\_\_\_  
( ) Apron: \_\_\_\_\_  
(X) Tyvek: \_\_\_\_\_  
( ) Saranex: \_\_\_\_\_  
( ) Coverall: \_\_\_\_\_  
( ) Other: \_\_\_\_\_Head and Eye: ( ) Not Needed  
(X) Safety Glasses: \_\_\_\_\_  
( ) Face Shield: \_\_\_\_\_  
( ) Goggles: \_\_\_\_\_  
(X) Hard Hat: \_\_\_\_\_  
( ) Other: \_\_\_\_\_Gloves: ( ) Not Needed  
( ) Undergloves: \_\_\_\_\_  
(X) Gloves: Nitrile or Latex  
( ) Overgloves: \_\_\_\_\_  
( ) Other: Specify BelowBoots: ( ) Not Needed  
(X) Boots: Leather steel-toed work boots  
(X) Overboots: RubberBLOCK C: TASK: 2  
LEVEL: C - MODIFIED(X) PRIMARY  
( ) CONTINGENCYRespiratory: ( ) Not Needed  
( ) SCBA, Airline: \_\_\_\_\_  
(X) APR: Full or Half Face  
( ) Cartridge: P100  
( ) Escape Mask: \_\_\_\_\_  
( ) Other: \_\_\_\_\_Protective Clothing: ( ) Not Needed  
( ) Encapsulated Suit: \_\_\_\_\_  
( ) Splash Suit: \_\_\_\_\_  
( ) Apron: \_\_\_\_\_  
(X) Tyvek: \_\_\_\_\_  
( ) Saranex: \_\_\_\_\_  
( ) Coverall: \_\_\_\_\_  
( ) Other: \_\_\_\_\_Head and Eye: ( ) Not Needed  
(X) Safety Glasses: \_\_\_\_\_  
( ) Face Shield: \_\_\_\_\_  
( ) Goggles: \_\_\_\_\_  
( ) Hard Hat: \_\_\_\_\_  
( ) Other: \_\_\_\_\_Gloves: ( ) Not Needed  
( ) Undergloves: \_\_\_\_\_  
(X) Gloves: Nitrile or Latex  
( ) Overgloves: \_\_\_\_\_  
( ) Other: Specify BelowBoots: ( ) Not Needed  
(X) Boots: Leather, steel-toed work boots  
(X) Overboots: Tyvek bootiesBLOCK D: TASK: 2  
LEVEL: LEAVE AREA( ) PRIMARY  
(X) CONTINGENCYRespiratory: ( ) Not Needed  
( ) SCBA, Airline: \_\_\_\_\_  
( ) APR: \_\_\_\_\_  
( ) Cartridge: \_\_\_\_\_  
( ) Escape Mask: \_\_\_\_\_  
( ) Other: \_\_\_\_\_Protective Clothing: ( ) Not Needed  
( ) Encapsulated Suit: \_\_\_\_\_  
( ) Splash Suit: \_\_\_\_\_  
( ) Apron: \_\_\_\_\_  
( ) Tyvek: \_\_\_\_\_  
( ) Saranex: \_\_\_\_\_  
( ) Coverall: \_\_\_\_\_  
( ) Other: \_\_\_\_\_Head and Eye: ( ) Not Needed  
( ) Safety Glasses: \_\_\_\_\_  
( ) Face Shield: \_\_\_\_\_  
( ) Goggles: \_\_\_\_\_  
( ) Hard Hat: \_\_\_\_\_  
( ) Other: \_\_\_\_\_Gloves: ( ) Not Needed  
( ) Undergloves: \_\_\_\_\_  
( ) Gloves: \_\_\_\_\_  
( ) Overgloves: \_\_\_\_\_  
( ) Other: Specify BelowBoots: ( ) Not Needed  
( ) Boots: \_\_\_\_\_  
( ) Overboots: \_\_\_\_\_

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Monitoring Equipment: *Specify by task. Indicate type as necessary. Attach additional sheets as necessary.*

INSTRUMENT	TASK	ACTION GUIDELINES		COMMENTS (includes schedules of use)
Combustible Gas Indicator	1-2-3-4-5-6 (X) Not Needed			Entering tanks, vats, sumps and other confined spaces is strictly forbidden.
Radiation Survey Meter	1-2-3-4-5-6 (X) Not Needed			Radiation is not an expected hazard.
Photoionization Detectors  ( ) 11.7 eV ( ) 10.2 eV ( ) 9.8 eV ( ) ___ eV Type _____	1-2-3-4-5-6 (X) Not Needed	Specify:  Detectable odor	If odor of any kind is detected, cease work, move to fresh air.	If further work is necessary in the area where odors were detected, personnel protection will be evaluated.
Flame Ionization Detector Type _____	1-2-3-4-5-6 (X) Not Needed	Specify:  Detectable odor	If odor of any kind is detected, cease work, move to fresh air.	If further work is necessary in the area where odors were detected, personnel protection will be evaluated.
Detector Tubes/ Monitor Type _____ Type _____	1-2-3-4-5-6 (X) Not Needed	Specify:		Toxic gases are not expected to be encountered. Entrance into confined spaces where toxic gases could be concentrated is strictly forbidden.
Respirable Dust Monitor Type <u>PDM-3 Miniram</u> Type _____	1-2-3-4-5-6 (X) Not Needed	Specify:	If team observes visible dust in air while working on or near the site they will cease work.	If dusty conditions persist, site will be abandoned and personnel protection reevaluated.
Other Specify:	1-2-3-4-5-6 (X) Not Needed	Specify:	If team members notices eye or throat irritation, or other symptoms of exposure, they will cease work.	



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**DECONTAMINATION PROCEDURES:****PERSONALIZED DECONTAMINATION:**

Wash well before hand to mouth contact is employed. A shower will be taken as soon as possible after leaving the field. Workers will remove protective clothing in this order:

- 1) Wash overboots in soapy water and rinse
- 2) Remove overboots or booties
- 3) Remove gloves
- 4) Remove safety glasses
- 5) Remove Tyvek or cloth coverall, if used
- 6) Remove respirator, if used
- 7) Remove inner gloves
- 8) Wash hands/face before eating/drinking

☐ Not Needed**SAMPLING EQUIPMENT DECONTAMINATION:**

See CDM Federal SOP 4-5. All sampling equipment will be thoroughly decontaminated as follows:

- 1) Wash and scrub with low phosphate detergent.
- 2) Potable tap water rinse.
- 3) Potable tap water rinse.
- 4) Thoroughly rinse with deionized water.
- 5) Air dry.
- 6) Wrap in aluminum foil for transport.

☐ Not Needed**HEAVY EQUIPMENT DECONTAMINATION:**

See CDM Federal SOP 4-5. All heavy equipment and tool parts that contact subsurface soil are constructed of heavy gauge steel and have no natural or synthetic components that could absorb and retain most soil-borne organic contaminants.

Prior to removal from the work site, potential contaminated soil/groundwater will be scraped or brushed from the exterior surfaces.

The drill rig, augers and any other large equipment in the exclusion zone will be taken to a decon pad and steam cleaned.

☒ Not Needed**CONTAINMENT AND DISPOSAL METHOD:**

All disposable PPE will be double bagged prior to disposal. Decon water to be disposed on-site.

☐ Not Needed**CONTAINMENT AND DISPOSAL METHOD:**

Decon water to be disposed on-site.

☐ Not Needed**CONTAINMENT AND DISPOSAL METHOD:**

All derived liquids will be contained and held for appropriate disposal.

☒ Not Needed

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## EMERGENCY CONTACTS:

Water Supply N/A  
 Site Telephone N/A  
 EPA Release Report #: 1-800-424-8802  
 CDM 24-Hour Emergency: 1-800-SKY-PAGE (31821#)  
 Facility Management: N/A  
 Other (specify):  
 CHEMTREC Emergency: 1-800-424-9300

## EMERGENCY CONTACTS:

## NAME:

## PHONE:

Health and Safety Manager Chuck Myers (703) 968-0900  
 Project Manager Bob Rennick (406) 443-7559  
 Site Safety Coordinator Bob Alexander (406) 443-7559  
 DOT Contact John McGuiggin (617) 494-2574  
 EPA Contact Paul Peronard (303) 312-6808  
 Environmental Agency (800) 234-5677  
 State Spill Number 911  
 Fire Department-Libby 911  
 Police Department-Libby 911  
 Sheriff's Department-Lincoln County 293-4112  
 Highway Patrol (800) 525-5555  
 Health Department 911  
 Poison Control Center 293-7781  
 Occupational Physical Edward Barnes (800) 764-7661 525-5042  
 1-800-229-3674

## CONTINGENCY PLANS: Summarize below.

Evacuate site if any unexpected hazardous conditions are encountered. If staff observe hazards for which they have not been prepared, they will withdraw from the area and call CDM Federal Health and Safety. CDM Federal personnel will leave the site and upgrade their level of protection if they experience nausea or dizziness. No volatile compounds are expected to be encountered at concentrations dangerous to human health. If any odors are noted, work will cease and personnel protection reevaluated. In the event of medical emergency, contact Hospital, Police or Sheriff's Department. If respirable dust is noted, additional engineering controls will be implemented. If these controls do not eliminate the exposure, personnel protection will be reevaluated.

## HEALTH AND SAFETY PLAN APPROVALS:

Prepared by: Robert R. Alexander Date: 12/6/99  
 SHSC Signature: Robert R. Alexander Date: 12/7/99  
 HSM Signature: Robert R. Alexander Date: 12/7/99  
for Chuck Myers (medical approval)

## MEDICAL EMERGENCY:

Hospital: Hospital St. Johns Lutheran Hospital 293-7761

Hospital Address:

Name of Contact at Hospital:

Name of 24-Hour Ambulance: Call 911

Route to Hospital: See site map (page 2 of 12)

Also, Kalispell Regional Medical Center (406) 752-5111  
 310 Sunnyview Lane  
 Kalispell, MT

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Route to Hospital - see page 2 of 12

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The following personnel have read and fully understand the contents of this Health and Safety Plan and further agree to all requirements contained herein.

[illegible]